

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Franz Rainer **Examiner:** Mendez, Zulmarie

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Serial No.: 10/681,009 Group A/I Unit 1723

Ground Art Unit 1723

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Docket 298-311

**For: A METHOD AND APPARATUS FOR THE MANUFACTURE OF
ONE OR MORE GASES**

MAIL STOP RCE
Commissioner for Patents
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DECLARATION

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I, Franz Rainer, do hereby declare:

1. I am the inventor of the invention being claimed in the above-identified application:

2. I have read and understand the Final Office Action mailed January 14, 2011 by the Patent and Trademark Office in the above-identified application, including art being applied against the claims, namely EP 0650929 to Sampson, EP 0237402 to Schirmann and JP69-092028 to Tokunaga.

3. The present invention improves production of hydrogen and/or oxyhydrogen gases in which the oxyhydrogen gas can be produced in the

correct stoichiometric ratio for producing energy. Unlike the prior art, a proton conductive membrane is not required in the present invention;

4. Referring to the drawings in the present application, I have found these and other improvements can be attained by including an ion-exchanger 10 in the production container 1 between the electrodes 6 and 7 and in the liquid 9 used to generate the hydrogen and/or oxyhydrogen gases. In the present method, hydrogen and/or oxyhydrogen gases are released and transported away from the generating medium, so these gases can be recovered;

5. The experiments documented in Examples 1-3 of the present application were carried out under my direction and control. More particularly, the experiments in these examples document synergistically-improved efficiency in generating oxyhydrogen gas in accordance with the present invention, i.e., over controls where no ion exchanger is used (Experiment 1 in all three examples);

6. Contrary to the present invention, Sampson relates to oxidizing or reducing inorganic and organic species directed through a packed bed ion exchange electrolytic reactor (page 2, lines 3-5), such as producing halous acids (useful as oxidizing agents) from dilute concentrations corresponding halide salts (page 2, lines 12-14). Such halous acids are

are used to control microbiological contamination in aqueous systems (page 2, line 30) such as municipal, industrial and commercial water systems (page 2, line 56). It is therefore an object of Sampson to electrolytically oxidize or reduce ~~reactive~~ species in dilute solutions, especially oxidize dilute halide solutions to halous solutions (page 3, lines 36-38);

8. Generation of hydrogen and hydroxyl ions in Sampson (page 6, lines 57-58) does not produce hydrogen and/or oxyhydrogen gases, but rather regenerates the ion exchange material (page 7, lines 6-7). As stated at page 7, lines 55-56 of Sampson, conversion of halides is improved. Furthermore, Sampson deals with performing specific selective oxidations (page 8, line 4) and with improving efficiency of certain reactions (page 8, line 11);

9. More specifically, the electrolytic process for controlled oxidation of halide species in aqueous solutions is demonstrated in the examples of Sampson (page 11, lines 8-9). Feed solutions such as potassium iodide (page 11, line 16) or sodium bromide (page 12, line 24) are passed through the packed bed electrolytic reactor, improving total iodine (page 11, line 40) or bromine (page 12, line 44) concentration of the exiting solution. Adding ion exchange material increase production of iodine (page 11, lines 53-54) or bromine (page 12, lines 51-52);

10. Accordingly, there is absolutely no suggestion to me, one skilled in the art, in Sampson of producing hydrogen and/or oxyhydrogen gases. Schimmann relates to producing hydrogen peroxide and isobutene while the English Abstract of Tokuyama makes no mention of producing hydrogen and/or oxyhydrogen gases. Accordingly, there is still absolutely no suggestion to me of producing hydrogen and/or oxyhydrogen gases, even if I were to consider Sampson in combination with Schimmann and Tokuyama; and

11. Furthermore, I declare all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true, and further these statements are made with the knowledge willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

12.05.2011
Date


Franz Roiner